

# Road Services Division 2013 Collision Data Report



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## Introduction

The King County Department of Transportation (KCDOT) is pleased to present the 2013 Collision Data Report. This report is prepared by the Road and Traffic Engineering unit of the Engineering Services section, of the King County Road Services Division.

This report was prepared to provide collision and safety information to elected officials, King County staff and the public.

The collision information provided in this report comes from the Washington State Department of Transportation (WSDOT) Collision Location Access Software (CLAS) database as of July 2014. This report covers only those collisions that occur on a county-maintained roadway within unincorporated King County and meet the reporting threshold of \$700 in property damage or result in an injury or fatality.

Other information used in this report is courtesy of the State of Washington's Office of Financial Management, the County Road Administration Board (CRAB), the Washington State Department of Transportation, and the Road Services Division's Engineering Services Section.

There are changes to the 2013 collision rate calculation, Table 1.2.1 Collision Rate per Million Vehicle Miles Traveled, on page 7. Table 1.2.1 displays the collision rate per million vehicle miles traveled. This year's table represents *corrected* collision rates per million vehicle miles traveled (MVMT) on King County maintained roadways. For the past six years, the average annual daily traffic count totals for FFC 19 and 9 (Urban Local and Rural Local roadways) used for calculating collision rates were higher than representative road segments in this class. Traffic counts were inflated because the traffic counts for local roadways were collected at locations adjacent to principal and collector arterials, resulting in higher than typical traffic counts for a local roadway.

To remedy this, sample traffic count volume data was collected on typical urban and rural local roadways. The AADT for urban local roads was calculated as 804 and 641 for rural local roads. These AADTs were used for re-calculating the MVMT on urban and rural local roadways, resulting in significantly lower MVMT and higher collision rates.

## 1.0 EXECUTIVE SUMMARY

During 2013, a total of 1,693 collisions were reported on King County maintained roadways. This included 11 fatal, 564 injury and 1,118 property damage collisions. The total societal and economic costs of these collisions are estimated at \$71 million dollars.

### 1.1 Six Year Trends

Since 2008, population, maintained road miles, and annual million miles traveled continue to decline. King County's unincorporated population fell from 341,150 to 253,100 (26 percent), while the number of maintained roadway miles dropped by 15 percent (from 1,758 to 1,492). The number of collisions dropped 22 percent from 2,157 to 1,693. Most of this decline is attributed to the number of annexations completed during this time period.

While the total number of collisions has slightly increased over the 2012 total (1,693 compared to 1,572), the proportion of severity has stayed relatively the same. In 2012, fatal collisions were less than 1 percent of the total, injury collisions were 35 percent and property damage only collisions amounted to 65 percent of the total. In 2013, fatal collisions were less than 1 percent, injury collisions were 33 percent of the total and property damage only collisions made up the remaining 66 percent.

Over two-thirds of all 2013 collisions were either run off the road (32%), rear-end (21%) or entering an intersection at an angle (14%). Pedestrian and bicycle collisions made up less than 3 percent of all collisions. About 60 percent of all run off the road collisions involved a roadway ditch, utility pole, tree or fence.

There were a total of 11 fatal collisions during 2013. Eight of these were run off the road collisions, one was a sideswipe collision and the other two involved a pedestrian and a bicyclist.

There were a total of 23 bicycle involved collisions and 23 pedestrian involved collisions in 2013. Eighty-seven percent (20) of all bike collisions and all pedestrian collisions resulted in an injury. There was one fatality each involving a bicycle or pedestrian. Twenty-six percent (6) of all pedestrian collisions involved a pedestrian under the age of 20, whereas 22% (5) of all bike collisions involved a bicyclist under the age of 20.

Table 1.1.1  
Number of Collisions  
By Severity

| Year | PDO*  | Percentage | Injury | Percentage | Fatal | Percentage | Total |
|------|-------|------------|--------|------------|-------|------------|-------|
| 2008 | 1,398 | 64.8%      | 743    | 34.5%      | 16    | 0.7%       | 2,157 |
| 2009 | 1,341 | 64.8%      | 722    | 34.9%      | 7     | 0.3%       | 2,070 |
| 2010 | 1,131 | 65.1%      | 600    | 34.5%      | 8     | 0.5%       | 1,739 |
| 2011 | 954   | 63.5%      | 540    | 36.0%      | 8     | 0.5%       | 1,502 |
| 2012 | 1,016 | 64.6%      | 544    | 34.6%      | 12    | 0.8%       | 1,572 |
| 2013 | 1,118 | 66.0%      | 564    | 33.3%      | 11    | 0.6%       | 1,693 |

\*Property Damage Only



## 1.2 Collision Rates and Road Miles

Table 1.2.1  
Collision Rate per Million Vehicle Miles Traveled

| Year | Total Collision | Average Daily Traffic | Maintained | Annual Million | Collision Rate |
|------|-----------------|-----------------------|------------|----------------|----------------|
|      | Reports         | Volumes (ADT)         | Road Miles | Miles Driven   |                |
| 2008 | 2,157           | 2,434                 | 1,758      | 1,562          | 1.38           |
| 2009 | 2,070           | 2,274                 | 1,743      | 1,447          | 1.43           |
| 2010 | 1,739           | 2,377                 | 1,632      | 1,416          | 1.23           |
| 2011 | 1,502           | 1,798                 | 1,531      | 1,005          | 1.49           |
| 2012 | 1,572           | 2,022                 | 1,504      | 1,110          | 1.42           |
| 2013 | 1,693           | 1,764                 | 1,492      | 961            | 1.76           |

Note: The collision rates shown in this table have been adjusted to reflect the traffic counts collected in the years shown. Previous versions of this report used Average Daily Traffic Volumes (AADT) which was higher than appropriate for some road segments.

Table 1.2.2  
Collision Rate per 100,000 Population

| Year | Population | All Collision Types |                                   | Pedestrian      |                                   | Bicycle         |                                   |
|------|------------|---------------------|-----------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|
|      |            | # of Collisions     | Collisions per 100,000 Population | # of Collisions | Collisions per 100,000 Population | # of Collisions | Collisions per 100,000 Population |
| 2008 | 341,150    | 2,157               | 632.27                            | 35              | 10.26                             | 25              | 7.33                              |
| 2009 | 343,180    | 2,070               | 603.18                            | 29              | 8.45                              | 16              | 4.66                              |
| 2010 | 284,100    | 1,739               | 612.11                            | 28              | 9.86                              | 24              | 8.45                              |
| 2011 | 253,565    | 1,502               | 592.35                            | 27              | 10.65                             | 29              | 11.44                             |
| 2012 | 255,700    | 1,572               | 614.78                            | 30              | 11.73                             | 21              | 8.21                              |
| 2013 | 253,100    | 1,693               | 668.91                            | 23              | 9.09                              | 23              | 9.09                              |

**Table 1.2.3**  
**Road Miles By**  
**Federal Functional Classification (FFC)**

| Federal Functional Class<br>(FFC) Description | FFC | Road<br>Miles | Annual Average<br>Daily Traffic<br>Volume (AADT) | Annual Million<br>Vehicle Miles<br>Traveled (VMT) |
|---|-----|---------------|--|---|
| Rural Minor Arterial                          | 6   | 41            | 4,518  | 68  |
| Rural Major Collector                         | 7   | 97            | 1,916  | 68  |
| Rural Minor Collector                         | 8   | 107           | 1,001  | 39  |
| Rural Local Access                            | 9   | 386           | 641  | 90  |
| Urban Principal Arterial                      | 14  | 38            | 13,399   | 186   |
| Urban Minor Arterial                          | 16  | 72            | 8,216  | 216   |
| Urban Collector                               | 17  | 80            | 2,870  | 84  |
| Urban Minor Collector                         | 18  | 20            | 2,536  | 19  |
| Urban Local Access                            | 19  | 651           | 804  | 191   |
| <b>Total</b>                                  |     | <b>1,492</b>  |  | <b>961</b>  |
| <b>Overall Weighted<br/>Average</b>           |     |               | <b>1,764</b>                                     |   |

Note: The Annual Average Daily Traffic Volumes (AADT) represented in this table were derived using available 2013 traffic count information for each of the Federal Functional Classifications (FFCs). In cases where limited traffic count data was available (FFC 9 and FFC 19), multiple years of traffic counts were used and estimated volumes generated based on guidelines set forth in the ITE Trip Generation Manual.

## 2.0 COLLISION TRENDS

### 2.1 Fatality and Fatal Collision Rates

Table 2.1.1  
Fatality Rate per 100,000 Population

|      |            | All Collision Types |                                   | Pedestrian      |                                   | Bicycle         |                                   |
|------|------------|---------------------|-----------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|
| Year | Population | # of Fatalities     | Fatalities per 100,000 population | # of Fatalities | Fatalities per 100,000 population | # of Fatalities | Fatalities per 100,000 population |
| 2008 | 341,150    | 16                  | 4.69                              | 1               | 0.29                              | 1               | 0.29                              |
| 2009 | 343,180    | 7                   | 2.04                              | 0               | 0.00                              | 0               | 0.00                              |
| 2010 | 284,100    | 8                   | 2.82                              | 1               | 0.35                              | 1               | 0.35                              |
| 2011 | 253,565    | 8                   | 3.16                              | 1               | 0.39                              | 0               | 0.00                              |
| 2012 | 255,700    | 12                  | 4.69                              | 1               | 0.39                              | 1               | 0.39                              |
| 2013 | 253,100    | 12                  | 4.74                              | 1               | 0.40                              | 1               | 0.40                              |

Table 2.12  
Fatal Collision Rate per 100,000 Population

|      |            | All Collision Types   |   | Pedestrian            |   | Bicycle               |   |
|------|------------|-----------------------|---|-----------------------|---|-----------------------|---|
| Year | Population | # of Fatal Collisions | Fatal Collisions per 100,000 Population | # of Fatal Collisions | Fatal Collisions per 100,000 Population | # of Fatal Collisions | Fatal Collisions per 100,000 Population |
| 2008 | 341,150    | 16                    | 4.69                                    | 1                     | 0.29                                    | 1                     | 0.29                                    |
| 2009 | 343,180    | 7                     | 2.04                                    | 0                     | 0.00                                    | 0                     | 0.00                                    |
| 2010 | 284,100    | 8                     | 2.82                                    | 1                     | 0.35                                    | 1                     | 0.35                                    |
| 2011 | 253,565    | 8                     | 3.16                                    | 1                     | 0.39                                    | 0                     | 0.00                                    |
| 2012 | 255,700    | 12                    | 4.69                                    | 1                     | 0.39                                    | 1                     | 0.39                                    |
| 2013 | 253,100    | 11                    | 4.35                                    | 1                     | 0.40                                    | 1                     | 0.40                                    |

Table 2.13  
Fatality Rate per  
100 Million Vehicle Miles Traveled

| Year | Number of Fatalities | Maintained Road Miles | Annual 100 Million Miles Traveled | Fatality Rate |
|------|----------------------|-----------------------|-----------------------------------|---------------|
| 2008 | 16                   | 1,758                 | 15.62                             | 1.02          |
| 2009 | 7                    | 1,743                 | 14.47                             | 0.48          |
| 2010 | 8                    | 1,632                 | 14.16                             | 0.56          |
| 2011 | 8                    | 1,531                 | 10.05                             | 0.80          |
| 2012 | 12                   | 1,504                 | 11.10                             | 1.08          |
| 2013 | 12                   | 1,492                 | 9.61                              | 1.25          |

Table 2.1.4  
Fatal Collision Rate per  
100 Million Vehicle Miles Traveled

| Year | Number of Fatal Collisions | Maintained Road Miles | Annual 100 Million Miles Traveled | Fatal Collision Rate |
|------|----------------------------|-----------------------|-----------------------------------|----------------------|
| 2008 | 16                         | 1,758                 | 15.62                             | 1.02                 |
| 2009 | 7                          | 1,743                 | 14.47                             | 1.48                 |
| 2010 | 8                          | 1,632                 | 14.16                             | 0.56                 |
| 2011 | 8                          | 1,531                 | 10.05                             | 0.80                 |
| 2012 | 12                         | 1,504                 | 11.10                             | 1.08                 |
| 2013 | 11                         | 1,492                 | 9.61                              | 1.14                 |

## 2.2 US, State, and Unincorporated King County Collision, Fatal Collision and Fatality Rate

Table 2.2.1  
US, State, and Unincorporated King County Collision Rate per 100,000 Population

|      | Unincorporated King County |            |                                   | Washington State |            |                                   | United States |               |                                   |
|------|----------------------------|------------|-----------------------------------|------------------|------------|-----------------------------------|---------------|---------------|-----------------------------------|
| Year | Population                 | Collisions | Collisions per 100,000 Population | Population       | Collisions | Collisions per 100,000 Population | Population    | Collisions    | Collisions per 100,000 Population |
| 2008 | 341,150                    | 2,157      | 663                               | 6,549,000        | 119,410    | 1,823                             | 304,060,000   | 5,811,000     | 1,911                             |
| 2009 | 343,180                    | 2,070      | 603                               | 6,668,200        | 102,859    | 1,543                             | 305,529,000   | 5,505,000     | 1,802                             |
| 2010 | 284,100                    | 1,739      | 613                               | 6,724,500        | 101,576    | 1,511                             | 308,746,000   | 5,419,000     | 1,755                             |
| 2011 | 253,565                    | 1,502      | 592                               | 6,801,100        | 98,820     | 1,453                             | 311,592,000   | 5,338,000     | 1,713                             |
| 2012 | 255,700                    | 1,572      | 617                               | 6,895,300        | 99,560     | 1,444                             | 313,874,000   | 5,615,000     | 1,789                             |
| 2013 | 253,100                    | 1,693      | 669                               | 6,971,400        | 99,689     | 1,430                             | 316,219,000   | Not Available | Not Available                     |

Table 2.2.2  
US, State, and Unincorporated King County Fatal Collision and  
Fatality Rate per 100,000 Population

|      | Unincorporated King County |   |                                   | Washington State |   |                                   | United States |   |                                   |
|------|----------------------------|---|-----------------------------------|------------------|---|-----------------------------------|---------------|---|-----------------------------------|
| Year | Population                 | Fatal Collisions per 100,000 Population | Fatalities per 100,000 Population | Population       | Fatal Collisions per 100,000 Population | Fatalities per 100,000 Population | Population    | Fatal Collisions per 100,000 population | Fatalities per 100,000 population |
| 2008 | 341,150                    | 4.69                                    | 4.98                              | 6,549,000        | 7.34                                    | 7.96                              | 304,060,000   | 11.19                                   | 13.69                             |
| 2009 | 343,180                    | 2.04                                    | 2.04                              | 6,668,200        | 7.34                                    | 7.96                              | 305,529,000   | 10.08                                   | 11.09                             |
| 2010 | 284,100                    | 2.82                                    | 2.82                              | 6,724,500        | 6.28                                    | 6.84                              | 308,746,000   | 10.80                                   | 10.65                             |
| 2011 | 253,565                    | 3.16                                    | 3.16                              | 6,801,100        | 6.19                                    | 6.68                              | 311,592,000   | 9.55                                    | 10.39                             |
| 2012 | 255,700                    | 4.69                                    | 5.48                              | 6,895,300        | 5.84                                    | 6.35                              | 313,874,000   | 9.81                                    | 10.69                             |
| 2013 | 253,100                    | 4.35                                    | 4.74                              | 6,971,400        | 5.81                                    | 6.31                              | 316,219,000   | Not Available                           | Not Available                     |

Source: Washington State Department of Transportation and the National Highway Traffic Safety Administration

**Table 2.2.3**  
**US, State, and Unincorporated King County**  
**Collision Rate per Million Vehicle Miles Traveled (VMT)**

|      | Unincorporated King County |            |                            | Washington State |            |                            | United States |               |                            |
|------|----------------------------|------------|----------------------------|------------------|------------|----------------------------|---------------|---------------|----------------------------|
| Year | Million VMT                | Collisions | Collisions per Million VMT | Million VMT      | Collisions | Collisions per Million VMT | Million VMT   | Collisions    | Collisions per Million VMT |
| 2008 | 1,562                      | 2,157      | 1.38                       | 55,213           | 119,410    | 2.16                       | 2,926,000     | 5,811,000     | 1.99                       |
| 2009 | 1,447                      | 2,070      | 1.43                       | 56,552           | 102,859    | 1.82                       | 2,975,000     | 5,505,000     | 1.85                       |
| 2010 | 1,416                      | 1,739      | 1.23                       | 57,190           | 101,576    | 1.78                       | 2,985,000     | 5,419,000     | 1.82                       |
| 2011 | 1,005                      | 1,502      | 1.49                       | 56,750           | 98,820     | 1.74                       | 2,946,000     | 5,338,000     | 1.81                       |
| 2012 | 1,110                      | 1,572      | 1.42                       | 56,600           | 99,560     | 1.76                       | 2,954,000     | 5,615,000     | 1.90                       |
| 2013 | 961                        | 1693       | 1.76                       | Not Available    | 99,689     | Not Available              | Not Available | Not Available | Not Available              |

**Table 2.2.4**  
**US, State, and Unincorporated King County Fatal Collision**  
**and Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)**

|      | Unincorporated King County |  |                                   | Washington State |  |                                   | United States   |  |                                   |
|------|----------------------------|--|-----------------------------------|------------------|--|-----------------------------------|-----------------|--|-----------------------------------|
| Year | 100 Million VMT            | Fatal Collision Rate per 100 Million VMT | Fatality Rate per 100 Million VMT | 100 Million VMT  | Fatal Collision Rate per 100 Million VMT | Fatality Rate per 100 Million VMT | 100 Million VMT | Fatal Collision Rate per 100 Million VMT | Fatality Rate per 100 Million VMT |
| 2008 | 15.62                      | 1.02                                     | 1.02                              | 552              | 0.87                                     | 0.94                              | 29,260          | 1.16                                     | 1.27                              |
| 2009 | 14.47                      | 0.48                                     | 0.48                              | 566              | 0.8                                      | 0.87                              | 29,750          | 1.04                                     | 1.14                              |
| 2010 | 14.16                      | 0.56                                     | 0.56                              | 572              | 0.74                                     | 0.80                              | 29,850          | 1.02                                     | 1.11                              |
| 2011 | 10.05                      | 0.80                                     | 0.80                              | 568              | 0.74                                     | 0.80                              | 29,460          | 1.01                                     | 1.10                              |
| 2012 | 11.10                      | 1.08                                     | 1.08                              | 566              | 0.71                                     | 0.77                              | 29,540          | 1.04                                     | 1.14                              |
| 2013 | 9.61                       | 1.14                                     | 1.25                              | Not Available    | Not Available                            | Not Available                     | Not Available   | Not Available                            | Not Available                     |

*Source: Washington State Department of Transportation and the National Highway Traffic Safety Administration*

## 2.3 Urban versus Rural Roads - Fatal Collision and Fatality Rates

**Table 2.3.1**  
Urban versus Rural Roads in Unincorporated King County  
Fatal Collision and Fatality Rate per 100,000 Population

| Urban Roads in Unincorporated King County |            |                       |                 |   |                                   | Rural Roads in Unincorporated King County |                       |                 |   |                                   |
|---|------------|-----------------------|-----------------|---|-----------------------------------|---|-----------------------|-----------------|---|-----------------------------------|
| Year                                      | Population | # of Fatal Collisions | # of Fatalities | Fatal Collisions per 100,000 Population | Fatalities per 100,000 Population | Population                                | # of Fatal Collisions | # of Fatalities | Fatal Collisions per 100,000 Population | Fatalities per 100,000 Population |
| 2008                                      | 197,150    | 8                     | 9               | 4.06                                    | 4.57                              | 144,000                                   | 8                     | 8               | 5.56                                    | 5.56                              |
| 2009                                      | 218,780    | 6                     | 6               | 2.74                                    | 2.74                              | 124,000                                   | 1                     | 1               | 0.80                                    | 0.80                              |
| 2010                                      | 160,500    | 5                     | 5               | 3.12                                    | 3.12                              | 123,600                                   | 3                     | 3               | 2.43                                    | 2.43                              |
| 2011                                      | 129,500    | 4                     | 4               | 3.09                                    | 3.09                              | 124,065                                   | 4                     | 4               | 3.22                                    | 3.22                              |
| 2012                                      | 131,400    | 6                     | 6               | 4.57                                    | 4.57                              | 124,300                                   | 6                     | 8               | 4.83                                    | 6.44                              |
| 2013                                      | 129,840    | 7                     | 8               | 5.39                                    | 6.16                              | 123,260                                   | 4                     | 4               | 3.25                                    | 3.25                              |

**Table 2.3.2**  
Urban versus Rural Roads in Unincorporated King County  
Fatal Collision Rate per 100 Million Vehicle Miles Traveled (VMT)

| Year | Fatal Collisions |       |       | Maintained Road Miles |       |       | Annual 100 Million VMT |       |       | Fatal Collision Rate per 100 Million VMT |       |       |
|------|------------------|-------|-------|-----------------------|-------|-------|------------------------|-------|-------|--|-------|-------|
|      | Urban            | Rural | Total | Urban                 | Rural | Total | Urban                  | Rural | Total | Urban                                    | Rural | Total |
| 2008 | 8                | 8     | 16    | 1,082                 | 676   | 1,758 | 20.98                  | 4.90  | 25.88 | 0.38                                     | 1.63  | 0.62  |
| 2009 | 6                | 1     | 7     | 1,075                 | 668   | 1,743 | 19.01                  | 4.31  | 23.33 | 0.32                                     | 0.23  | 0.30  |
| 2010 | 5                | 3     | 8     | 968                   | 664   | 1,632 | 10.98                  | 3.18  | 14.16 | 0.46                                     | 0.94  | 0.56  |
| 2011 | 4                | 4     | 8     | 864                   | 667   | 1,531 | 6.86                   | 3.19  | 10.05 | 0.58                                     | 1.25  | 0.80  |
| 2012 | 6                | 6     | 12    | 840                   | 664   | 1,504 | 7.41                   | 3.69  | 11.10 | 0.81                                     | 1.63  | 1.08  |
| 2013 | 7                | 4     | 11    | 861                   | 631   | 1,492 | 6.96                   | 2.65  | 9.61  | 1.01                                     | 1.51  | 1.14  |

*Note: The total number of urban maintained road miles increased from 2012 to 2013 because the County Road Administration Board (CRAB) re-classified 21 King County miles from a rural federal functional classification (FFC) to a new FFC designation FFC 18 - Urban Minor Collector.*

**Table 2.3.3**  
**Urban versus Rural Roads in Unincorporated King County**  
**Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)**

|      | Fatalities |       |       | Maintained Road Miles |       |       | Annual 100 Million VMT |       |       | Fatalities per 100 Million VMT |       |       |
|------|------------|-------|-------|-----------------------|-------|-------|------------------------|-------|-------|--------------------------------|-------|-------|
| Year | Urban      | Rural | Total | Urban                 | Rural | Total | Urban                  | Rural | Total | Urban                          | Rural | Total |
| 2008 | 9          | 8     | 17    | 1082                  | 676   | 1758  | 11.61                  | 4.01  | 15.62 | 0.76                           | 1.99  | 1.02  |
| 2009 | 6          | 1     | 7     | 1075                  | 668   | 1743  | 10.82                  | 3.65  | 14.47 | 0.55                           | 0.27  | 0.48  |
| 2010 | 5          | 3     | 8     | 968                   | 664   | 1632  | 10.98                  | 3.18  | 14.16 | 0.46                           | 0.94  | 0.56  |
| 2011 | 4          | 4     | 8     | 864                   | 667   | 1531  | 6.86                   | 3.19  | 10.05 | 0.58                           | 1.25  | 0.80  |
| 2012 | 6          | 8     | 14    | 840                   | 644   | 1504  | 7.41                   | 3.69  | 11.10 | 0.81                           | 2.17  | 1.08  |
| 2013 | 8          | 4     | 12    | 861                   | 631   | 1492  | 6.96                   | 2.65  | 9.61  | 1.15                           | 1.50  | 1.25  |

**Table 2.3.4**  
**Urban versus Rural Collision Rate**  
**Per Million Vehicle Miles Traveled (VMT)**

|      | Number of Collisions |       |       | Maintained Road Miles |       |       | Annual Million VMT |       |       | Collisions per Million VMT |       |       |
|------|----------------------|-------|-------|-----------------------|-------|-------|--------------------|-------|-------|----------------------------|-------|-------|
| Year | Urban                | Rural | Total | Urban                 | Rural | Total | Urban              | Rural | Total | Urban                      | Rural | Total |
| 2008 | 1,710                | 447   | 2,157 | 1,082                 | 676   | 1,758 | 1,161              | 401   | 1,562 | 1.47                       | 1.11  | 1.38  |
| 2009 | 1,657                | 413   | 2,070 | 1,075                 | 668   | 1,743 | 1,082              | 365   | 1,447 | 1.53                       | 1.13  | 1.43  |
| 2010 | 1,404                | 335   | 1,739 | 968                   | 664   | 1,632 | 1,098              | 318   | 1,416 | 1.28                       | 1.05  | 1.23  |
| 2011 | 1,136                | 366   | 1,502 | 864                   | 667   | 1,531 | 686                | 319   | 1,005 | 1.66                       | 1.15  | 1.49  |
| 2012 | 1,195                | 377   | 1,572 | 840                   | 644   | 1,504 | 741                | 369   | 1,110 | 1.61                       | 1.02  | 1.42  |
| 2013 | 1,337                | 356   | 1,693 | 861                   | 631   | 1,492 | 696                | 265   | 961   | 1.92                       | 1.34  | 1.76  |



## 2.4 Collisions by Road Classification

Table 2.4.1  
Collisions by King County Road Classification

| Year | Principal Arterial | Minor Arterial | Collector | Local Access | Total |
|------|--------------------|----------------|-----------|--------------|-------|
| 2008 | 544                | 592            | 498       | 523          | 2,157 |
| 2009 | 512                | 538            | 517       | 503          | 2,070 |
| 2010 | 409                | 466            | 391       | 473          | 1,739 |
| 2011 | 335                | 443            | 350       | 374          | 1,502 |
| 2012 | 343                | 459            | 407       | 363          | 1,572 |
| 2013 | 395                | 504            | 415       | 379          | 1,693 |

## 3.0 COLLISION TYPES

### 3.1 Collision Severity

Table 3.1.1  
Collisions by Collision Type

| Collision Type          | 2008         | 2009         | 2010         | 2011         | 2012         | 2013         |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Fixed Object            | 595          | 588          | 529          | 453          | 528          | 540          |
| Rear - End              | 454          | 435          | 381          | 321          | 288          | 353          |
| Entering at Angle       | 271          | 341          | 265          | 239          | 254          | 235          |
| Left Turn               | 117          | 140          | 110          | 95           | 112          | 118          |
| Hit Parked Car          | 187          | 194          | 154          | 112          | 117          | 138          |
| Other                   | 40           | 40           | 27           | 38           | 30           | 56           |
| Sideswipe               | 99           | 77           | 52           | 53           | 52           | 89           |
| Vehicle Overturned      | 69           | 89           | 61           | 54           | 41           | 49           |
| Pedestrian              | 35           | 29           | 28           | 27           | 30           | 23           |
| Head On                 | 34           | 34           | 25           | 21           | 27           | 21           |
| Bicycle                 | 26           | 16           | 23           | 29           | 21           | 23           |
| Right Turn              | 11           | 18           | 19           | 19           | 18           | 19           |
| Animal                  | 19           | 16           | 11           | 14           | 12           | 18           |
| Backing                 | 10           | 12           | 17           | 5            | 10           | 0            |
| Entering Driveway       | 59           | 0            | 0            | 1            | 1            | 0            |
| Leaving Driveway        | 88           | 0            | 0            | 0            | 0            | 0            |
| Leaving Parked Position | 7            | 6            | 10           | 6            | 5            | 0            |
| Non Collision           | 3            | 4            | 3            | 0            | 1            | 3            |
| Other Object            | 12           | 10           | 15           | 6            | 6            | 8            |
| U-Turn                  | 21           | 21           | 9            | 9            | 19           | 0            |
| <b>Totals</b>           | <b>2,157</b> | <b>2,070</b> | <b>1,739</b> | <b>1,502</b> | <b>1,572</b> | <b>1,693</b> |

Table 3.1.2  
Fatal Collisions by Collision Type

| Collision Type     | 2008      | 2009     | 2010     | 2011     | 2012      | 2013      |
|--------------------|-----------|----------|----------|----------|-----------|-----------|
| Fixed object       | 7         | 5        | 2        | 4        | 4         | 8         |
| Vehicle overturned | 2         | 1        | 0        | 2        | 0         | 0         |
| Head on            | 1         | 0        | 1        | 1        | 2         | 0         |
| Pedestrian         | 1         | 0        | 1        | 1        | 1         | 1         |
| Animal             | 1         | 0        | 0        | 0        | 0         | 0         |
| Bicycle            | 1         | 0        | 1        | 0        | 1         | 1         |
| Entering at angle  | 3         | 0        | 0        | 0        | 4         | 0         |
| Left turn          | 0         | 0        | 2        | 0        | 0         | 0         |
| Other              | 0         | 1        | 0        | 0        | 0         | 0         |
| Rear - end         | 0         | 0        | 1        | 0        | 0         | 0         |
| Sideswipe          | 0         | 0        | 0        | 0        | 0         | 1         |
| <b>Totals</b>      | <b>16</b> | <b>7</b> | <b>8</b> | <b>8</b> | <b>12</b> | <b>11</b> |

Table 3.1.3  
2013 Collisions by Collision Type and Severity

| Collision Type     | PDO          | Injury     | Fatal     | Total        | Percentage |
|--------------------|--------------|------------|-----------|--------------|------------|
| Fixed object       | 360          | 172        | 8         | 540          | 31.9       |
| Rear - end         | 233          | 120        | 0         | 353          | 20.9       |
| Entering at angle  | 156          | 79         | 0         | 235          | 13.9       |
| Left turn          | 62           | 56         | 0         | 118          | 7.0        |
| Hit Parked Car     | 128          | 10         | 0         | 138          | 8.2        |
| Other              | 48           | 16         | 0         | 64           | 3.3        |
| Sideswipe          | 68           | 20         | 1         | 89           | 5.3        |
| Vehicle overturned | 19           | 30         | 0         | 49           | 2.9        |
| Pedestrian         | 0            | 22         | 1         | 23           | 1.4        |
| Head on            | 9            | 12         | 0         | 21           | 1.2        |
| Bicycle            | 3            | 19         | 1         | 23           | 1.4        |
| Right Turn         | 19           | 3          | 0         | 22           | 1.1        |
| Animal             | 13           | 5          | 0         | 18           | 1.1        |
| <b>Total</b>       | <b>1,118</b> | <b>564</b> | <b>11</b> | <b>1,693</b> | <b>100</b> |

Table 3.1.4  
2013 Run Off Road Collisions  
By First Object Struck and Severity

| Item Struck                                       | PDO        | Injury     | Fatality | Total      | % of Total    |
|---|------------|------------|----------|------------|---------------|
| Roadway Ditch                                     | 56         | 29         | 0        | 85         | 15.7%         |
| Tree or Stump (stationary)                        | 51         | 31         | 1        | 83         | 15.4%         |
| Utility Pole                                      | 46         | 32         | 3        | 81         | 15.0%         |
| Fence   | 58         | 11         | 2        | 71         | 13.1%         |
| Guardrail - Face                                  | 20         | 12         | 0        | 32         | 5.9%          |
| Earth Bank or Ledge                               | 17         | 14         | 0        | 31         | 5.7%          |
| Wood Sign Post                                    | 23         | 5          | 1        | 29         | 5.4%          |
| Mailbox   | 21         | 7          | 0        | 28         | 5.2%          |
| Over Embankment - No Guardrail Present            | 8          | 5          | 1        | 14         | 2.6%          |
| Street Light Pole or Base                         | 7          | 3          | 0        | 10         | 1.9%          |
| Utility Box                                       | 6          | 4          | 0        | 10         | 1.9%          |
| Other Objects                                     | 6          | 1          | 0        | 7          | 1.3%          |
| Underside of Bridge                               | 5          | 1          | 0        | 6          | 1.1%          |
| Culvert and/or Other Appurtenance in Ditch        | 4          | 2          | 0        | 6          | 1.1%          |
| Curb, Raised Traffic Island or Raised Median Curb | 3          | 3          | 0        | 6          | 1.1%          |
| Fire Hydrant                                      | 5          | 0          | 0        | 5          | 0.9%          |
| Boulder (Stationary)                              | 4          | 1          | 0        | 5          | 0.9%          |
| Retaining Wall (concrete, rock, brick, etc.)      | 2          | 3          | 0        | 5          | 0.9%          |
| Building  | 4          | 0          | 0        | 4          | 0.7%          |
| Bridge Rail - Face                                | 2          | 2          | 0        | 4          | 0.7%          |
| Metal Sign Post                                   | 2          | 2          | 0        | 4          | 0.7%          |
| Guardrail - Leading End                           | 2          | 1          | 0        | 3          | 0.6%          |
| Concrete Barrier/Jersey Barrier - Face            | 2          | 0          | 0        | 2          | 0.4%          |
| Signal Pole                                       | 2          | 0          | 0        | 2          | 0.4%          |
| Utility Pole or Box                               | 2          | 0          | 0        | 2          | 0.4%          |
| Guardrail - Through, Over or Under                | 0          | 2          | 0        | 2          | 0.2%          |
| Guidepost   | 1          | 0          | 0        | 1          | 0.2%          |
| Rock Bank or Ledge                                | 1          | 0          | 0        | 1          | 0.2%          |
| Not Stated  | 0          | 1          | 0        | 1          | 0.2%          |
| <b>Total</b>                                      | <b>360</b> | <b>172</b> | <b>8</b> | <b>540</b> | <b>100.0%</b> |

### 3.2 Fixed Object Collisions

Table 3.2.1  
Collision Rate per Million Vehicle Miles Traveled (VMT) for  
Collisions Involving Fixed Objects

| Year | Total Number of<br>Fixed Object<br>Collisions |       |       | Maintained Road<br>Miles |       |       | Annual Million VMT |       |       | Collision Rate for<br>Fixed Object<br>Collisions per<br>Million VMT |       |       |
|------|---|-------|-------|--------------------------|-------|-------|--------------------|-------|-------|---|-------|-------|
|      | Urban   | Rural | Total | Urban                    | Rural | Total | Urban              | Rural | Total | Urban   | Rural | Total |
| 2008 | 377   | 229   | 606   | 1,082                    | 676   | 1,758 | 2,098              | 490   | 2,588 | 0.18  | 0.47  | 0.23  |
| 2009 | 395   | 200   | 595   | 1,075                    | 668   | 1,743 | 1,901              | 431   | 2,332 | 0.21  | 0.46  | 0.26  |
| 2010 | 396   | 167   | 563   | 968                      | 664   | 1,632 | 1,098              | 318   | 1,416 | 0.36  | 0.53  | 0.4   |
| 2011 | 273   | 194   | 467   | 864                      | 667   | 1,531 | 686                | 319   | 1,005 | 0.40  | 0.61  | 0.47  |
| 2012 | 345   | 197   | 542   | 840                      | 664   | 1,504 | 741                | 369   | 1,110 | 0.47  | 0.53  | 0.49  |
| 2013 | 356   | 184   | 540   | 861                      | 631   | 1,492 | 696                | 265   | 961   | 0.51  | 0.69  | 0.56  |

Figure 3.2.1  
Fatal Collisions Involving Fixed Objects as a  
Percentage of All Fatal Collisions

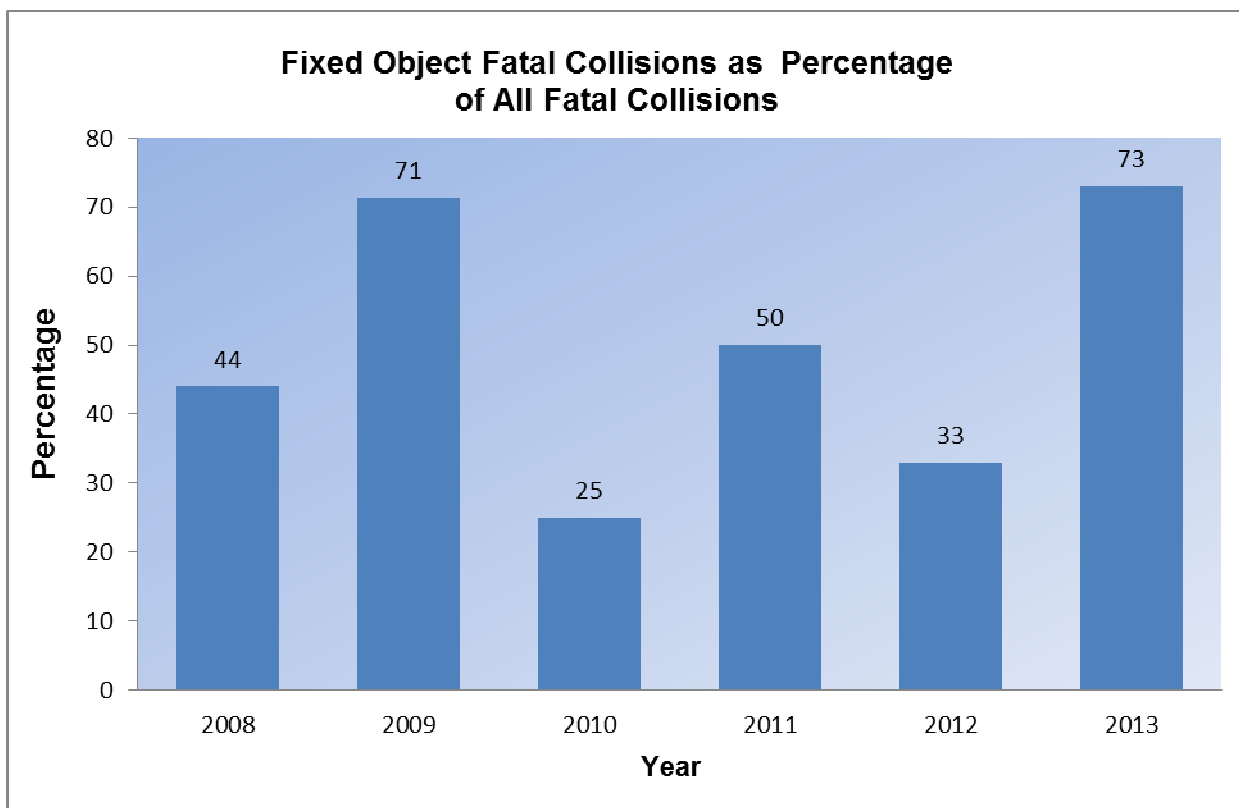
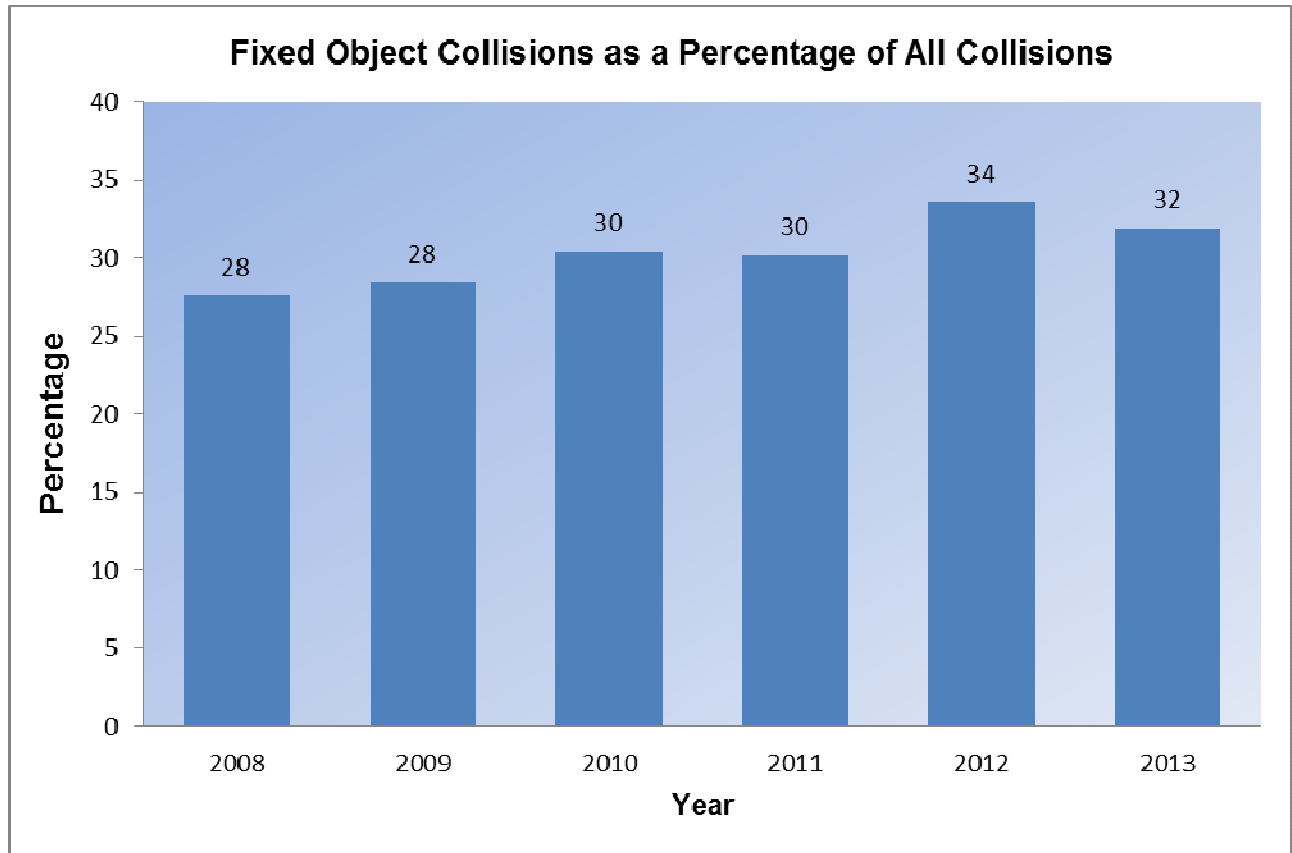


Figure 3.2.2  
Collisions Involving Fixed Objects as a  
Percentage of All Collisions





### 3.3 Pedestrian Involved Collisions

Table 3.3.1  
Pedestrian Involved Collisions by Severity

| Year | Fatal | Injury | Property<br>Damage Only | Total<br>Collisions |
|------|-------|--------|-------------------------|---------------------|
| 2008 | 1     | 34     | 0                       | 35                  |
| 2009 | 0     | 29     | 0                       | 29                  |
| 2010 | 1     | 27     | 0                       | 28                  |
| 2011 | 1     | 26     | 0                       | 27                  |
| 2012 | 1     | 28     | 1                       | 30                  |
| 2013 | 1     | 22     | 0                       | 23                  |

Table 3.3.2  
2013 Pedestrian Involved Collisions by Facility  
Used and Severity

| Facility           | No<br>Injury | Injury | Fatality | Total |
|--------------------|--------------|--------|----------|-------|
| Marked X walk      | 0            | 7      | 0        | 7     |
| Roadway            | 0            | 9      | 0        | 9     |
| Shoulder           | 0            | 3      | 1        | 4     |
| Unmarked X<br>walk | 0            | 3      | 0        | 3     |
| Total:             | 0            | 22     | 1        | 23    |

Table 3.3.3  
Pedestrian Involved Collisions  
By Contributing Circumstance

| Contributing Circumstance                   | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|------|------|------|------|------|------|
| Fail to Yield Row to Pedestrian             | 14   | 11   | 12   | 13   | 10   | 3    |
| None  | 8    | 5    | 9    | 9    | 13   | 7    |
| Other                                       | 5    | 6    | 6    | 1    | 2    | 8    |
| Exceeding Reasonable Safe Speed             | 1    | 2    | 0    | 1    | 0    | 1    |
| Inattention                                 | 0    | 2    | 0    | 1    | 1    | 3    |
| Operating Defective Equipment               | 2    | 0    | 0    | 1    | 1    | 0    |
| Disregard Stop and Go Light                 | 0    | 0    | 0    | 1    | 0    | 0    |
| Driver Distractions Outside Vehicle         | 0    | 2    | 0    | 0    | 0    | 0    |
| Driver Operating Handheld Telecommunication | 0    | 0    | 0    | 0    | 1    | 0    |
| Under Influence of Drugs                    | 0    | 1    | 0    | 0    | 0    | 0    |
| Apparently Ill                              | 1    | 0    | 0    | 0    | 0    | 0    |
| Exceeding Stated Speed Limit                | 1    | 0    | 1    | 0    | 0    | 0    |
| Improper Backing                            | 1    | 0    | 0    | 0    | 0    | 0    |
| Improper Turn                               | 0    | 0    | 0    | 0    | 2    | 1    |
| Other Driver Distractions Inside Vehicle    | 1    | 0    | 0    | 0    | 0    | 0    |
| Under Influence of Alcohol                  | 1    | 0    | 0    | 0    | 0    | 0    |
| Total                                       | 35   | 29   | 28   | 27   | 30   | 23   |

Table 3.3.4  
Age of Pedestrians Involved in Collisions

| Age Range    | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Unknown      | 2         | 2         | 2         | 0         | 2         | 0         |
| 0-5          | 0         | 1         | 1         | 1         | 3         | 2         |
| 6-10         | 2         | 0         | 2         | 2         | 2         | 2         |
| 11-15        | 6         | 5         | 3         | 6         | 0         | 2         |
| 16-20        | 5         | 4         | 5         | 3         | 7         | 3         |
| 21-25        | 3         | 3         | 2         | 2         | 2         | 2         |
| 26-30        | 2         | 0         | 3         | 1         | 1         | 3         |
| 31-35        | 3         | 3         | 0         | 1         | 2         | 0         |
| 36-40        | 3         | 2         | 2         | 2         | 1         | 1         |
| 41-45        | 3         | 0         | 2         | 2         | 3         | 1         |
| 46-50        | 1         | 1         | 1         | 0         | 2         | 1         |
| 51-55        | 2         | 5         | 0         | 1         | 2         | 1         |
| 56-60        | 2         | 3         | 1         | 4         | 1         | 4         |
| 61-65        | 1         | 0         | 1         | 0         | 1         | 1         |
| 66-70        | 0         | 0         | 0         | 0         | 0         | 0         |
| 71-75        | 0         | 0         | 2         | 0         | 0         | 0         |
| 76-80        | 0         | 0         | 1         | 2         | 0         | 0         |
| 81-85        | 0         | 0         | 0         | 0         | 0         | 0         |
| 86+          | 0         | 0         | 0         | 0         | 1         | 0         |
| <b>Total</b> | <b>35</b> | <b>29</b> | <b>28</b> | <b>27</b> | <b>30</b> | <b>23</b> |

Table 3.3.5  
Gender of Pedestrians Involved in Collisions

| Year | Female | Male | Total |
|------|--------|------|-------|
| 2008 | 15     | 20   | 35    |
| 2009 | 10     | 19   | 29    |
| 2010 | 10     | 18   | 28    |
| 2011 | 14     | 13   | 27    |
| 2012 | 16     | 14   | 30    |
| 2013 | 08     | 15   | 23    |

### 3.4 Bicycle Involved Collisions

Table 3.4.1  
Bicycle Involved Collisions by Severity

| Year | PDO | Injury | Fatal | Total |
|------|-----|--------|-------|-------|
| 2008 | 1   | 24     | 1     | 26    |
| 2009 | 1   | 15     | 0     | 16    |
| 2010 | 0   | 22     | 1     | 23    |
| 2011 | 0   | 29     | 0     | 29    |
| 2012 | 2   | 18     | 1     | 21    |
| 2013 | 3   | 19     | 1     | 23    |

### 3.5 Motorcycle Involved Collisions

Table 3.5.1  
Motorcycle Involved Collisions  
By Severity

| Year | Property Damage Only | Injury | Fatality | Total |
|------|----------------------|--------|----------|-------|
| 2008 | 9                    | 52     | 3        | 64    |
| 2009 | 7                    | 58     | 1        | 66    |
| 2010 | 11                   | 41     | 2        | 54    |
| 2011 | 4                    | 32     | 2        | 38    |
| 2012 | 7                    | 37     | 6        | 50    |
| 2013 | 5                    | 38     | 2        | 45    |

## 4.0 OTHER COLLISION INFORMATION

### 4.1 Estimated Economic Costs

Table 4.1.1  
Estimated Economic Costs of Collision Activity

| Severity             | 2013 Collisions | Estimated Cost in Millions of Dollars |
|----------------------|-----------------|---------------------------------------|
| Property Damage Only | 1,118           | \$10,173,800                          |
| Injury               | 564             | \$44,386,800                          |
| Fatal                | 11              | \$15,620,000                          |
| Total                | 1,693           | \$71,180,600                          |

***The following estimated costs per accident are used in this calculation:***

*Property Damage Only-\$9,100, Injury-\$78,700, Fatality-\$1,420,000*

*(National Safety Council, 2011)*

## 4.2 Month, Day of Week, and Time of Day

Figure 4.2.1  
2013 Collisions by Month

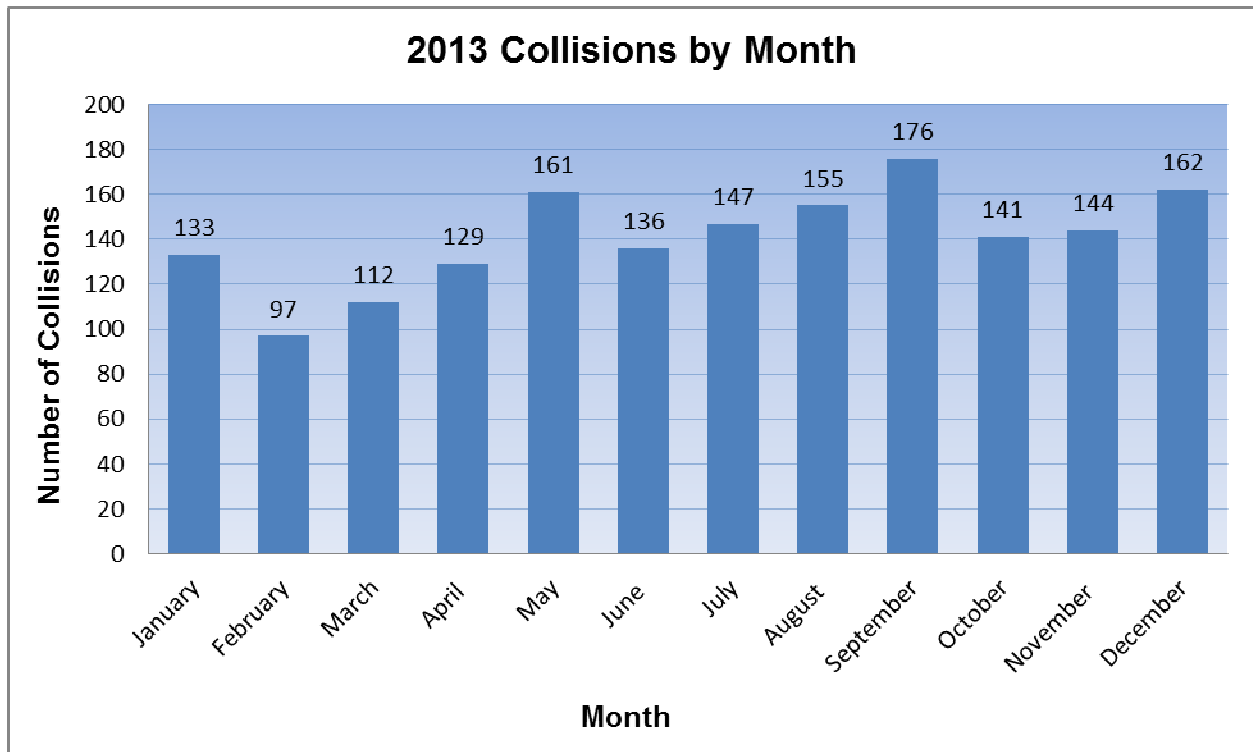


Figure 4.2.2  
2013 Collisions by Day of Week

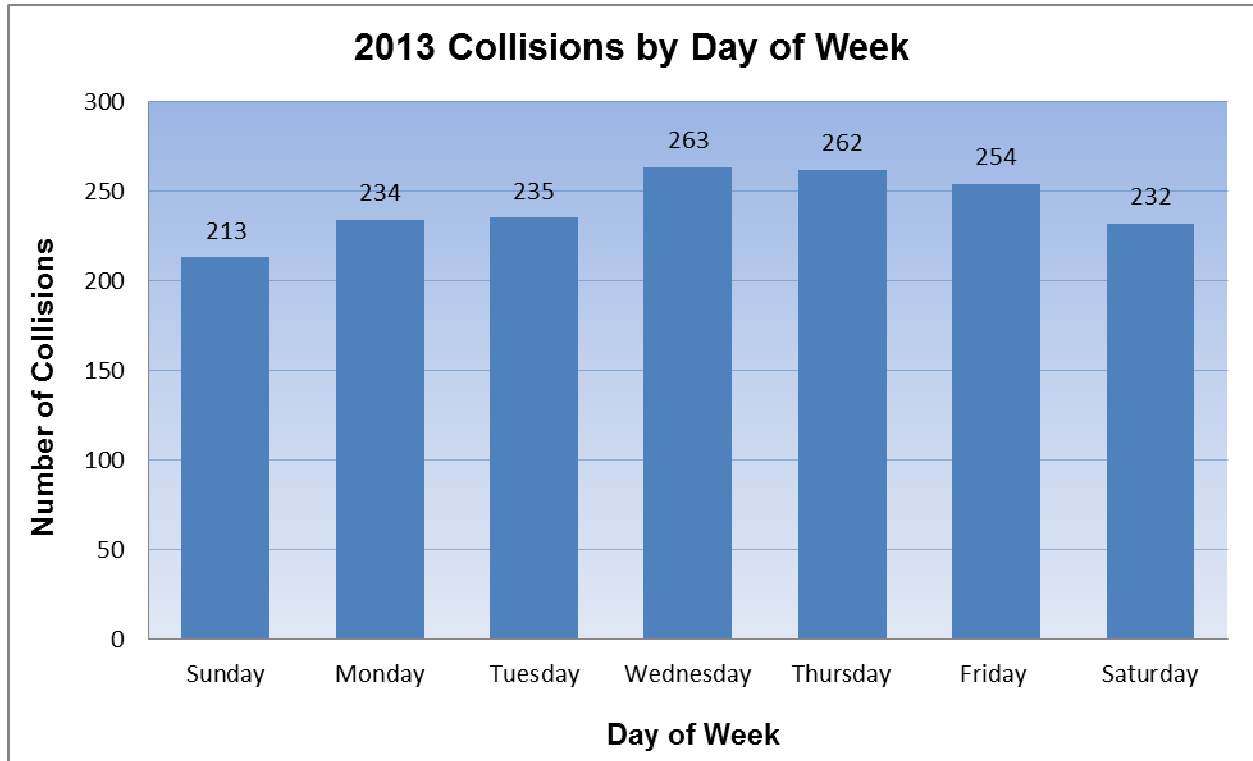




Figure 4.2.3  
2013 Weekday Collisions  
By Time of Day

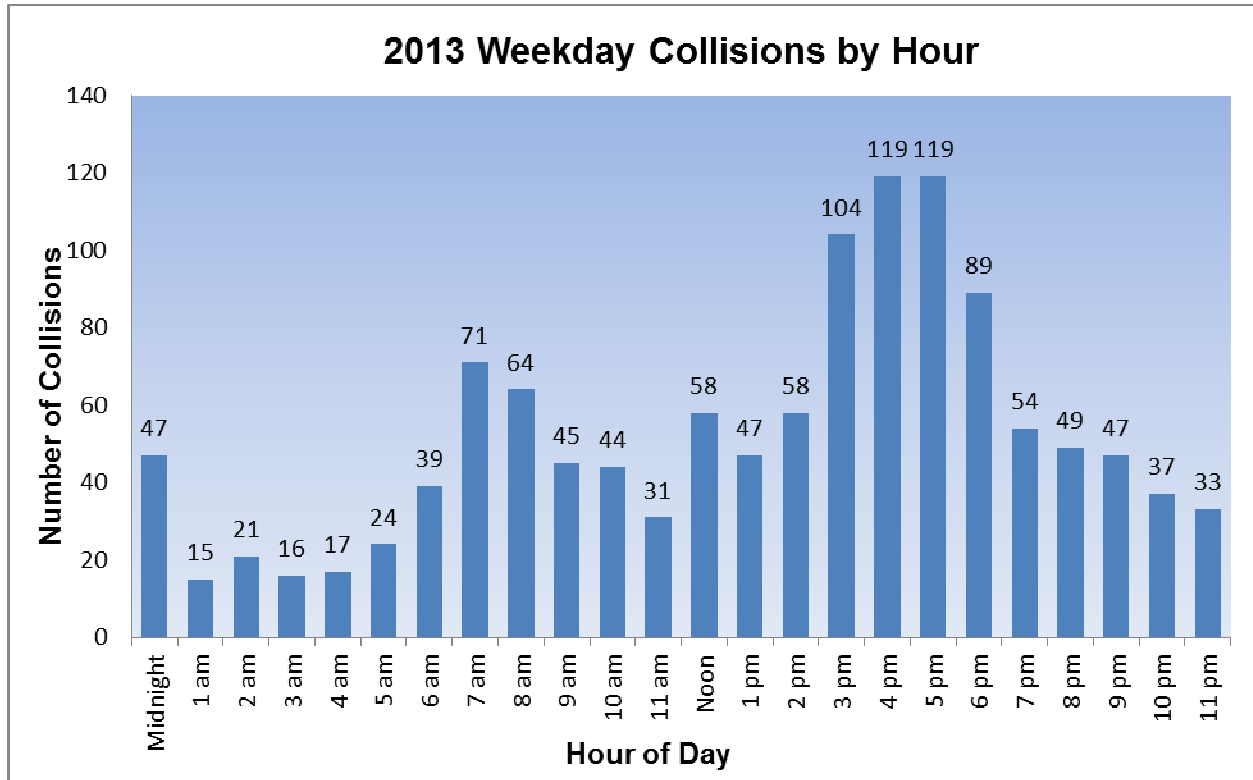
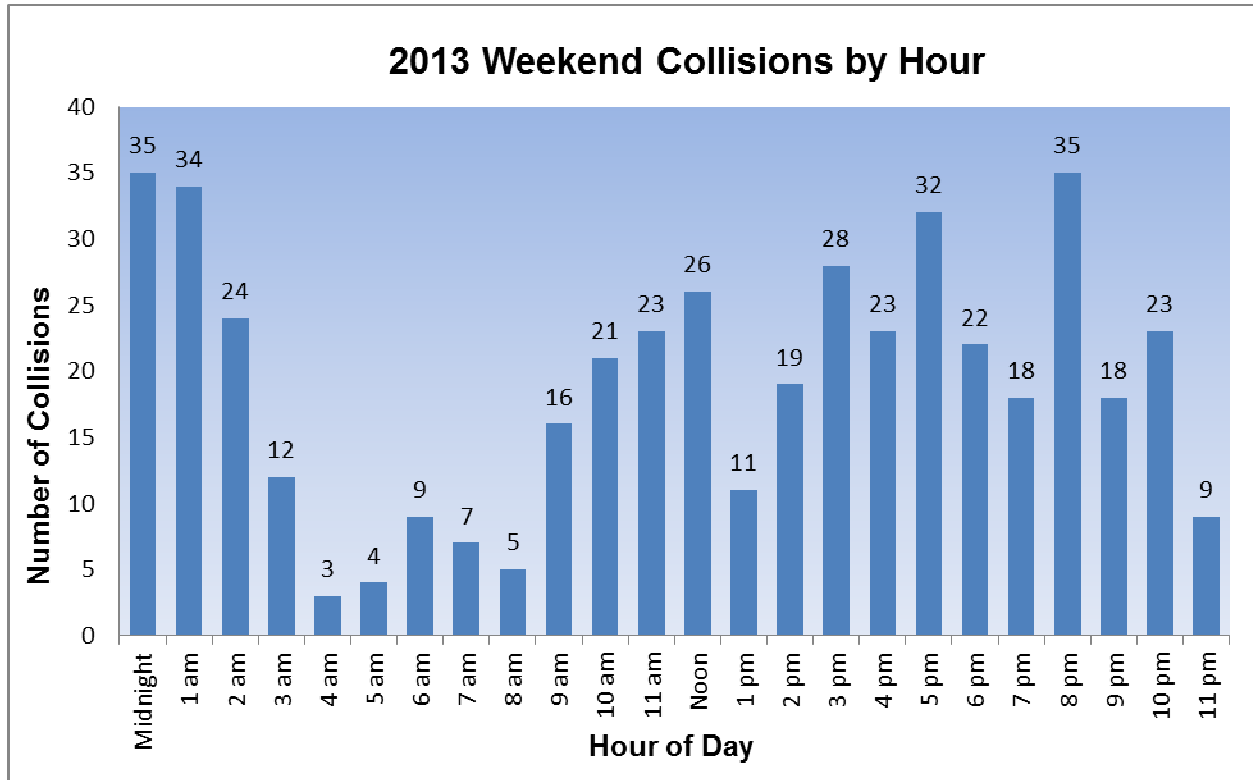


Figure 4.2.4  
2013 Weekend Collisions  
By Time of Day



## 4.3 Weather Conditions

Table 4.3.1  
Fatal Collisions by Weather Condition

| Year | Clear or Partly Cloudy | Fog or Smog or Smoke | Overcast | Raining | Unknown | Total |
|------|------------------------|----------------------|----------|---------|---------|-------|
| 2008 | 6                      | 1                    | 7        | 2       | 0       | 16    |
| 2009 | 2                      | 0                    | 4        | 0       | 1       | 7     |
| 2010 | 5                      | 0                    | 2        | 1       | 0       | 8     |
| 2011 | 5                      | 1                    | 2        | 0       | 0       | 8     |
| 2012 | 9                      | 0                    | 2        | 1       | 0       | 12    |
| 2013 | 8                      | 0                    | 3        | 0       | 0       | 11    |

Table 4.3.2  
Injury Collisions by Weather Condition

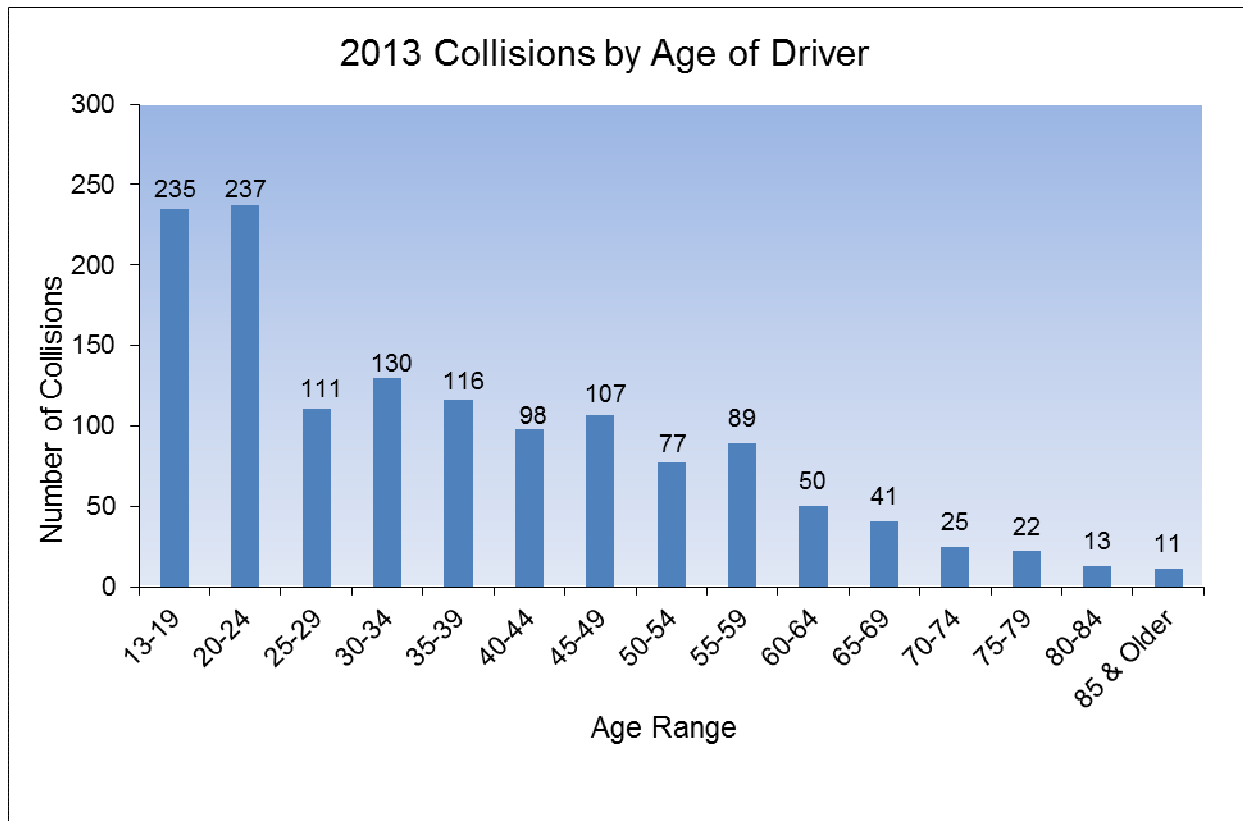
| Year | Blowing Sand or Dirt or Snow | Clear or Partly Cloudy | Fog or Smog or Smoke | Other | Overcast | Raining | Severe Crosswind | Sleet, Hail or Freezing Rain | Snowing | Unknown | Total |
|------|------------------------------|------------------------|----------------------|-------|----------|---------|------------------|------------------------------|---------|---------|-------|
| 2008 | 0                            | 430                    | 6                    | 0     | 150      | 134     | 0                | 2                            | 18      | 3       | 743   |
| 2009 | 0                            | 470                    | 11                   | 1     | 103      | 117     | 0                | 4                            | 12      | 4       | 722   |
| 2010 | 1                            | 344                    | 6                    | 0     | 85       | 151     | 1                | 0                            | 6       | 6       | 600   |
| 2011 | 0                            | 340                    | 1                    | 1     | 93       | 97      | 1                | 1                            | 2       | 5       | 540   |
| 2012 | 0                            | 308                    | 4                    | 3     | 94       | 125     | 0                | 0                            | 7       | 3       | 544   |
| 2013 | 0                            | 333                    | 10                   | 0     | 99       | 112     | 1                | 3                            | 7       | 4       | 564   |

Table 4.3.3  
Property Damage Collisions by Weather Condition

| Year | Blowing Sand or Dirt or Snow | Clear or Partly Cloudy | Fog or Smog or Smoke | Other | Overcast | Raining | Severe Crosswind | Sleet, Hail or Freezing Rain | Snowing | Unknown | Total |
|------|------------------------------|------------------------|----------------------|-------|----------|---------|------------------|------------------------------|---------|---------|-------|
| 2008 | 0                            | 735                    | 8                    | 2     | 272      | 312     | 0                | 5                            | 30      | 34      | 1398  |
| 2009 | 0                            | 800                    | 32                   | 2     | 189      | 253     | 1                | 5                            | 29      | 30      | 1341  |
| 2010 | 0                            | 604                    | 7                    | 5     | 182      | 286     | 0                | 1                            | 23      | 23      | 1131  |
| 2011 | 0                            | 508                    | 4                    | 0     | 199      | 207     | 0                | 4                            | 12      | 20      | 954   |
| 2012 | 0                            | 512                    | 5                    | 4     | 189      | 243     | 0                | 4                            | 21      | 38      | 1016  |
| 2013 | 1                            | 661                    | 40                   | 6     | 153      | 215     | 0                | 4                            | 5       | 33      | 1118  |

## 4.4 Demographics

Figure 4.4.1  
2013 Collisions by Age of Driver



## 4.5 Contributing Circumstances

Table 4.5.1  
Leading Contributing Circumstance  
For Drivers between ages 16 to 25 for 2013

| Leading Contributing Circumstance            | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | Totals |
|--|----|----|----|----|----|----|----|----|----|----|--------|
| Apparently Asleep                            | 1  | 1  | 3  | 2  | 3  | 2  | 1  | 1  | 3  | 1  | 18     |
| Apparently Fatigued                          | 1  |    |    |    |    |    |    |    |    |    | 1      |
| Did Not Grant Right of Way to Vehicle        | 4  | 11 | 4  | 2  | 8  | 5  | 3  | 6  | 2  | 2  | 47     |
| Disregard Stop and Go Light                  |    | 2  |    |    |    | 1  |    |    | 2  |    | 5      |
| Disregard Stop Sign - Flashing Red           | 2  | 1  | 1  |    | 2  |    |    |    |    |    | 6      |
| Driver Adjusting Audio or Entertainment      |    |    | 1  |    |    | 1  |    |    |    |    | 2      |
| Driver Distractions Outside Vehicle          | 1  | 2  |    | 4  | 2  | 1  | 1  |    |    | 1  | 12     |
| Driver Eating or Drinking                    |    |    | 1  |    |    | 1  |    |    |    |    | 2      |
| Driver Not Distracted                        | 1  |    | 1  |    | 1  |    |    |    |    |    | 3      |
| Driver Operating Cellphone/Electronic Device | 2  |    |    | 2  | 1  |    |    | 1  |    | 1  | 7      |
| Driver Smoking                               |    |    |    |    |    |    | 1  |    |    |    | 1      |
| Exceeding Safe Speed or Speed Limit          | 11 | 15 | 17 | 17 | 12 | 6  | 9  | 4  | 5  | 6  | 102    |
| Follow Too Closely                           | 5  | 5  | 3  | 1  | 2  | 5  | 1  | 2  | 2  | 2  | 28     |
| Improper Backing                             | 1  |    | 1  |    |    | 1  | 2  |    | 1  |    | 6      |
| Improper Parking Location                    |    |    |    |    |    |    |    |    | 1  |    | 1      |
| Improper Passing                             |    |    |    |    |    | 3  |    |    |    | 1  | 4      |
| Improper Turn                                | 0  | 2  | 1  | 1  | 1  | 1  |    | 1  |    |    | 7      |
| Improper U-Turn                              | 2  |    | 1  | 3  | 1  | 1  |    |    |    |    | 8      |
| Inattention                                  | 6  | 10 | 8  | 7  | 9  | 12 | 5  | 9  | 3  | 5  | 74     |
| None   | 1  | 2  | 2  | 4  | 2  | 4  | 2  | 1  | 3  | 3  | 24     |
| Operating Defective Equipment                | 2  | 2  | 1  | 1  |    | 1  | 2  |    | 1  | 1  | 11     |
| Other  | 3  | 7  | 8  | 2  | 4  | 7  | 6  | 3  | 4  |    | 44     |
| Other Driver Distractions Inside Vehicle     |    | 2  | 1  |    | 1  |    |    | 1  | 2  | 1  | 8      |
| Over Center Line                             | 2  | 3  | 1  | 3  |    | 1  | 1  |    | 1  | 1  | 13     |
| Under Influence of Alcohol                   |    | 1  | 4  | 2  | 4  | 6  | 7  | 6  | 8  |    | 38     |
| Under Influence of Drugs                     |    |    | 1  |    |    | 2  |    |    |    |    | 3      |
| Unknown Driver Distraction                   | 2  |    | 3  | 2  | 4  | 1  | 1  | 2  | 1  | 1  | 17     |

Table 4.5.2  
2013 Contributing Circumstance - all Collisions

| 2013 Collisions by Contributing Circumstance | Fatality | Injury | PDO  | Total |
|--|----------|--------|------|-------|
| Apparently Asleep                            | 1        | 17     | 23   | 41    |
| Apparently Fatigued                          |          | 2      | 2    | 4     |
| Apparently Ill                               |          | 5      | 3    | 8     |
| Did Not Grant R/W to Pedestrian/Bicyclist    |          | 1      | 1    | 2     |
| Did Not Grant RW to Vehicle                  |          | 71     | 105  | 176   |
| Disregard Stop and Go Light                  |          | 4      | 16   | 20    |
| Disregard Stop Sign - Flashing Red           |          | 12     | 16   | 28    |
| Driver Adjusting Audio or Entertainment      |          | 5      |      | 5     |
| Driver Distractions Outside Vehicle          |          | 11     | 16   | 27    |
| Driver Eating or Drinking                    |          |        | 4    | 4     |
| Driver Interacting with Passengers, Animal   |          | 4      | 6    | 10    |
| Driver Not Distracted                        |          | 7      | 8    | 15    |
| Driver Operating Handheld Device             |          | 2      | 5    | 7     |
| Driver Operating Other Electronic Device     |          | 2      | 1    | 3     |
| Driver Smoking                               |          | 1      | 1    | 2     |
| Exceeding Reasonable Safe Speed              | 3        | 71     | 134  | 208   |
| Exceeding Stated Speed Limit                 | 1        | 15     | 18   | 34    |
| Fail to Yield Row to Pedestrian              |          | 3      |      | 3     |
| Fail to Yield ROW to Pedestrian/Bicyclist    |          |        | 1    | 1     |
| Follow Too Closely                           |          | 22     | 62   | 84    |
| Had Taken Medication                         |          |        | 1    | 1     |
| Headlight Violation                          |          |        | 1    | 1     |
| Improper Backing                             |          |        | 26   | 26    |
| Improper Parking Location                    |          |        | 2    | 2     |
| Improper Passing                             |          | 5      | 12   | 17    |
| Improper Signal                              |          |        | 1    | 1     |
| Improper Turn                                |          | 6      | 22   | 28    |
| Improper U-Turn                              |          | 3      | 16   | 19    |
| Inattention                                  |          | 80     | 169  | 249   |
| None   |          | 35     | 66   | 101   |
| Operating Defective Equipment                |          | 13     | 13   | 26    |
| Other  | 3        | 80     | 210  | 293   |
| Other Driver Distractions Inside Vehicle     |          | 5      | 9    | 14    |
| Over Center Line                             | 2        | 22     | 32   | 56    |
| Under Influence of Alcohol                   | 1        | 42     | 56   | 99    |
| Under Influence of Drugs                     |          | 7      | 5    | 12    |
| Unknown Driver Distraction                   |          | 11     | 55   | 66    |
| Total  | 11       | 564    | 1118 | 1693  |

## 4.6 Impairment

Table 4.6.1  
Collisions Involving  
Drivers under the Influence (DUI)

| Year | Fatal | % of Fatalities | Injury | % of All Injury | Property Damage Only | % of all PDO | Total | % of all Collisions |
|------|-------|-----------------|--------|-----------------|----------------------|--------------|-------|---------------------|
| 2008 | 7     | 43.8            | 81     | 10.9            | 93                   | 6.7          | 181   | 8.4                 |
| 2009 | 3     | 42.9            | 73     | 10.1            | 111                  | 8.3          | 187   | 9.0                 |
| 2010 | 2     | 25.0            | 76     | 12.7            | 95                   | 8.4          | 173   | 9.9                 |
| 2011 | 3     | 37.5            | 76     | 14.1            | 68                   | 7.1          | 147   | 9.8                 |
| 2012 | 8     | 66.7            | 71     | 13.1            | 77                   | 7.6          | 156   | 9.9                 |
| 2013 | 2     | 16.7            | 65     | 11.5            | 81                   | 7.2          | 148   | 8.7                 |



Figure 4.6.2  
2013 Weekend Collisions for  
Drivers under the Influence  
By Time of Day

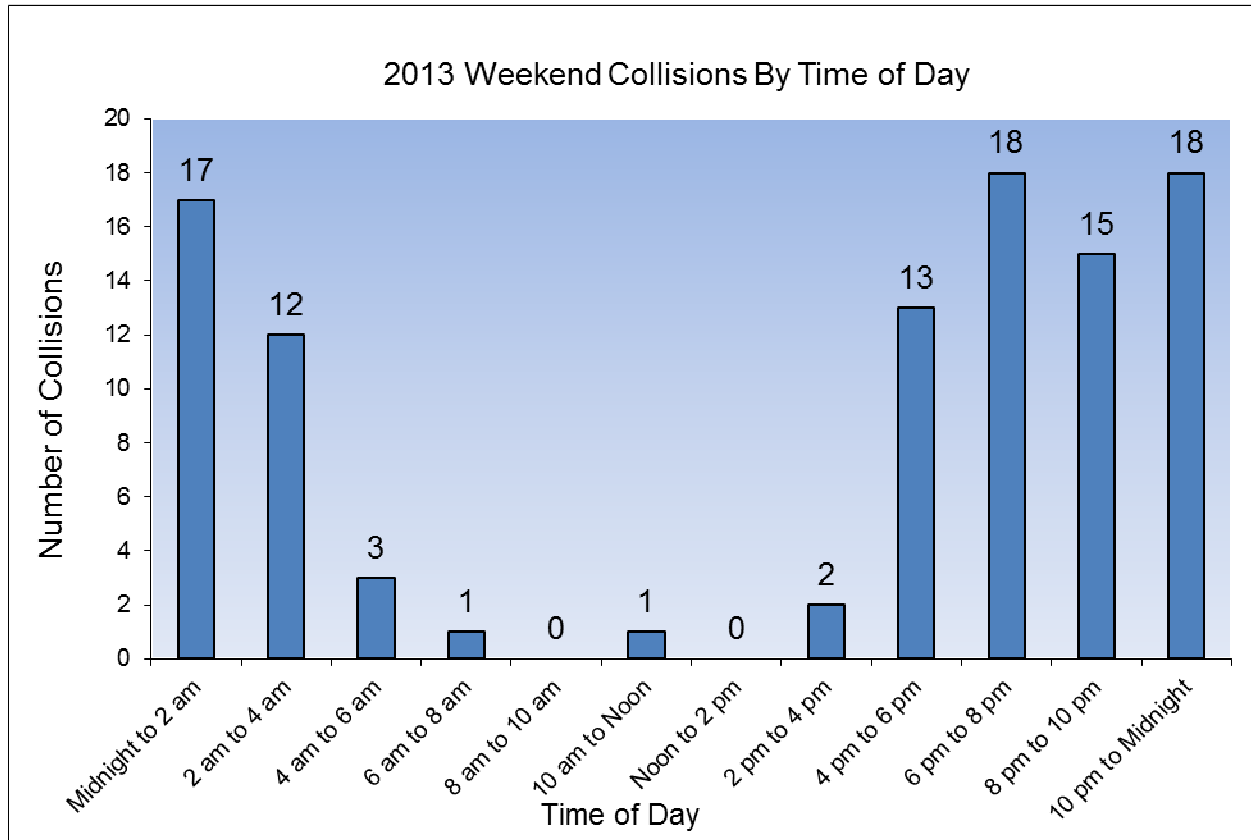
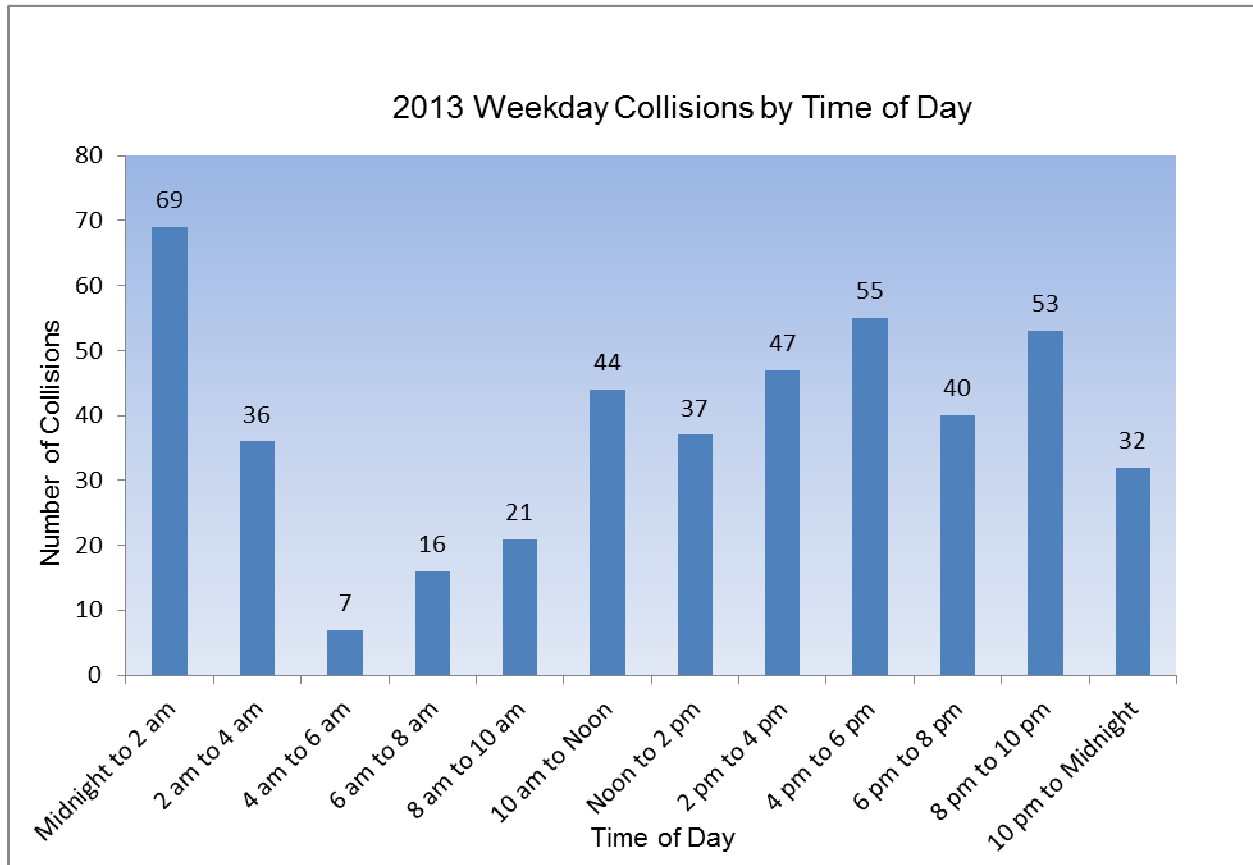


Figure 4.6.3  
2013 Weekday Collisions for  
Drivers under the Influence  
By Time of Day



## 4.7 Speed

Table 4.7.1  
Speeding as a Contributing Circumstance in  
Fatal, Injury, and Property Damage Collisions

| Year | Fatal | % of All Fatalities | Injury | % of All Injury | PDO | % of All PDO | Total | % of All Collisions |
|------|-------|---------------------|--------|-----------------|-----|--------------|-------|---------------------|
| 2008 | 7     | 43.75               | 233    | 31.36           | 432 | 30.90        | 672   | 31.15               |
| 2009 | 4     | 57.14               | 225    | 31.16           | 339 | 25.28        | 568   | 27.44               |
| 2010 | 2     | 25.00               | 167    | 27.83           | 303 | 26.79        | 472   | 27.14               |
| 2011 | 5     | 62.50               | 127    | 23.52           | 221 | 23.17        | 353   | 23.50               |
| 2012 | 4     | 33.33               | 120    | 22.06           | 201 | 19.78        | 325   | 20.67               |
| 2013 | 4     | 36.36               | 86     | 15.25           | 152 | 13.60        | 242   | 14.29               |

## 4.8 Lighting Conditions

Table 4.8.1  
2013 Collisions By  
Lighting Condition

| Lighting Condition     | Fatal | Injury | Property Damage Only | Totals |
|------------------------|-------|--------|----------------------|--------|
| Daylight               | 5     | 349    | 644                  | 832    |
| Dark-Street Lights On  | 1     | 82     | 199                  | 320    |
| Dark-No Street Lights  | 5     | 80     | 177                  | 253    |
| Dusk                   | 0     | 26     | 38                   | 57     |
| Unknown                | 0     | 4      | 14                   | 59     |
| Dawn                   | 0     | 13     | 31                   | 31     |
| Dark-Street Lights Off | 0     | 10     | 15                   | 24     |
| Totals                 | 11    | 564    | 1,118                | 1,693  |

## **Appendix A DATA SOURCES**

### **Collision Data**

Collision information was obtained from the Washington State Department of Transportation's (WSDOT) Collision Data and Analysis Branch. The Collision Data and Analysis Branch is responsible for updating and maintaining all electronic collision records in Washington State. Vehicular collisions which sustain more than \$700 in property damage, or involve an injury or a death are required to be reported to the Washington State Patrol by a Police Traffic Collision Report. The Washington State Patrol provides hard copies of the Police Traffic Collision Report to WSDOT, where they are converted into an electronic format.

Injuries are classified based on conditions that are present at the time of the collision except in the case of fatalities. An injury resulting in a death within 30 days of the collision is classified as a fatal injury.

### **Population Data and King County Land Area**

King County's population figure is from the Washington State Office of Financial Management. King County's land area figure is from King County's Office of Policy and Regional Planning.

### **King County Maintained Roadway Figures**

King County's maintained roadway mile figures are from King County Road Service's Strategic Business and Operations Section (SBOS).

### **Traffic Count Data**

The traffic count information used in this report was provided by King County's Road and Traffic Engineering Unit.

## **Appendix B FORMULAS IN REPORT**

### **Collision Rate per Million Vehicle Miles Traveled**

$R = (\text{Collisions} * 10^6) / (\text{AADT} * 365 * L)$ , where

Rate = accident rate for collisions per million vehicle mile (acc/mvm),

Collisions= total number of collisions in one year period

AADT = Annual average daily traffic volume, and

L = Length of study section in miles

### **Collision Rate per 100,000 Population**

Rate = Collisions\*100,000/Unincorporated Population

Collisions = total number of collisions in a one year period

### **Societal Costs of Collisions**

The societal costs of collisions were calculated as follows:

Cost = \$9,100\*PDO + \$78,700\*I + \$1,420,000\*F, where

1. PDO – Total Number of Property Damage Collisions = \$9, 100.00
2. I – Total Number of Injury Collisions = \$78,700.00
3. F – Total Number of Fatal Collisions = \$1,420,000.00